1162-76-133 **Gung-Min Gie***, Department of mathematics, University of Louisville, Louisville, KY 40292, and **Chang-Yeol Jung** and **Hoyeon Lee**. *Enriched Finite Volume approximations of the plane-parallel flows at a small viscosity.*

We discuss the viscous boundary layers of the plane-parallel flow, governed by the stationary Navier-Stokes equations under a certain symmetry. Performing boundary layer analysis, we first construct the so-called corrector, which is an analytic approximation of the velocity vector field near the boundary. Then, by embedding the corrector function into the classical Finite Volume schemes, we construct the semi-analytic enriched Finite Volume schemes for the plane-parallel flow, and numerically verify that our new enriched schemes reduce significantly the computational error of classical schemes especially near the boundary. (Received August 29, 2020)